

CITY OF TIGARD, OREGON

RESOLUTION NO. 02-69

A RESOLUTION ADOPTING THE TIGARD TREE MANUAL

WHEREAS, the Tigard Tree Ordinance provides direction to the City regarding the planting, maintenance, protection and removal of trees on City Property; and

WHEREAS, in Tigard Municipal Code Section 9.06.010.3, authority is given to adopt a Tree Manual; and

WHEREAS, the Tree Manual establishes the guidelines by which the ordinance will be followed; and

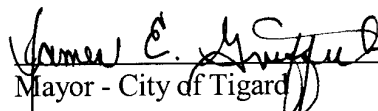
WHEREAS, the Manual will serve as a reference for determining such things as the correct amount of tree protection, the number of trees required to replant an area or what protocol must be followed when evaluating and/or removing hazardous trees.

NOW, THEREFORE, BE IT RESOLVED by the Tigard City Council that:

SECTION 1: The Tigard Tree Manual, Exhibit "A", is the official guideline for the care, maintenance, protection, planting and removal of trees in the City of Tigard.

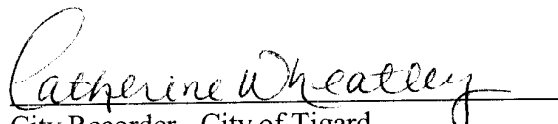
EFFECTIVE DATE: This Resolution to be effective thirty (30) days after adoption.

PASSED: This 12th day of November, 2002.



Mayor - City of Tigard

ATTEST:



City Recorder - City of Tigard

TIGARD TREE MANUAL

Guidelines for the Care, Maintenance, Protection,
Planting and Removal of Trees in the
City of Tigard, Oregon

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010 Purpose.

1. The purpose of this manual is to provide detailed standards to implement Tigard Municipal Code Section 9.06.

020 Definitions.

1. Afforestation. The conversion of open land into forest. See: Reforestation.
2. Caliper. The diameter of a tree trunk measured 6 inches above the soil. If the diameter is more than four (4) inches then the diameter must be measured at 12 inches above the soil.
3. City Forester. Under the direction of the Public Works Director is responsible for planning, developing and implementing a comprehensive urban forestry program, and providing community education and advice in support of urban forestry activities.
4. City Property. “City Property” includes all land owned by the City and all land dedicated to the public and administered by the City, including but not limited to City right of way and City parks.
5. City-owned Property. City property other than right of way.
6. Critical Root Zone (CRZ). A circular region measured outward from a tree trunk representing the essential area of roots that must be maintained and protected for the tree’s survival. The CRZ is determined by whichever is greater:
 - a. The outer edge of the dripline;
 - b. Measuring a radius outward from the tree equal to one foot for every caliper inch less than four (4) inches when measured at six inches above the ground;
 - c. Measuring a radius outward from the tree equal to one foot for every inch at DBH when the caliper inches are greater than four (4) inches when measured at six inches above the ground.
7. Diameter at Breast Height (DBH). Diameter of the tree trunk measured four and a half feet (4 ½ feet) from the ground on the uphill side if a slope exists.
8. Large-sized Tree. Any tree that habitually grows in excess of 40 feet in height and has a canopy spread of more than 35 feet at full maturity.

9. Medium-sized Tree. Any tree that habitually grows between 25 feet and 40 feet in height and has a canopy spread of 16 to 35 feet at maturity.
10. Mulch. Organic material applied within the root zone of a tree. May include leaf litter, pine straw, shredded bark, peat moss or wood chips.
11. Prune. The cutting or trimming of a tree in a manner which is consistent with ANSI A300-2001.
12. Reforestation. The creation of a biological community dominated by trees and other woody plants containing at least 100 trees per acre with at least 50% of those trees having the potential of attaining a 2-inch or greater diameter at DBH within seven years. See: Afforestation..
13. Small-sized Tree. Any tree that habitually grows less than 35 feet in height and has a canopy spread of 25 feet or less at maturity.
14. Terminal Role. Branch that assumes the dominant vertical position on the top of a tree.
15. Tree Pit. A cut-out area in the sidewalk where a tree is growing.

030 Tree Planting

1. Purpose. The purpose of this section is to establish standards for the proper and appropriate planting, maintenance, protection and removal of street trees located within City property and the City right of way in order to maintain and improve the survival, safety, aesthetics and environmental benefits of trees:
 - a. By planting trees according to the guidelines set forth by the International Society of Arboriculture;
 - b. By caring for and maintaining trees according to the American National Standards Institute (ANSI) guidelines;
2. Tree Planting:
 - a. The Public Works Director or designee must approve the planting of any trees planted on City property. This includes choosing appropriate trees from the Street Tree List or those approved by the Public Works Director or designee;
 - b. All trees shall be planted according to the standards established by the International Society of Arboriculture;
 - c. Plant material shall be of high grade, and shall meet the size and grading standards of *The American Standard for Nursery Stock*, ANSI Z60.1-1996;
 - d. Planting diverse types of trees lowers the potential for devastating impacts of insect and disease outbreaks that many communities have experienced. In order to lower the effects of insect and disease outbreaks and lessen the burden of tree removal and replacement efforts on the city, choosing a diversity of appropriate species, genera and families of trees to plant on City property shall be a priority;

- e. Planting native tree species shall be the primary goal. However, choosing tree species that will adapt to the site and reach maturity shall also be a factor when planting trees on City property;
- f. Unless otherwise approved by the Public Works Director or designee, trees shall have a minimum caliper of one inch and a maximum of 1.75 inches (when not in conflict with Community Development Code provisions), when measured 6 inches above grade;
- g. Unless otherwise approved by the Public Works Director or designee, the specific spacing of trees by size of tree shall be as follows:
 - (1) Small or narrow-stature trees shall be spaced no greater than 20 feet apart and not closer than 15 feet apart;
 - (2) Medium-sized trees shall be spaced no greater than 30 feet apart and not closer than 20 feet apart;
 - (3) Large trees shall be spaced no greater than 40 feet apart and not closer than 30 feet apart;
 - (4) Street Trees shall not be planted closer than 20 feet to light poles or utility poles;
 - (5) Visual clearance must be maintained according to the guidelines set forth in Chapter 18.795 of the Tigard City Code;
 - (6) Trees shall not be planted closer than four feet from private driveways (measured at the back edge of the sidewalk), fire hydrants or utility poles to maintain visual clearance;
 - (7) Tree pits shall be located so as to not include utilities (e.g. water and gas meters) in the tree well;
 - (8) On-premises utilities (e.g. water and gas meters) shall not be installed within existing tree well areas;
 - (9) New light poles or utility poles shall not be positioned closer than 20 feet to the main trunk of existing street trees except when public safety dictates, then they may be positioned no closer than 10 feet to the main trunk;
 - (10) Where there are overhead utility lines, the street tree species selected shall be of a type which, at full maturity, will not interfere with the lines;
 - (11) Trees shall not be planted within two feet of any permanent hard surface paving or walkway;
 - (a) Space between the tree and the hard surface may be covered by a nonpermanent hard surface such as grates, bricks on sand, paver blocks and cobblestones; and
 - (b) Tree pits shall be at least:

- 1) 4' X 4' for small-sized trees;
 - 2) 5' X 5' for medium-sized trees;
 - 3) 6' X 6' for large-sized trees.
- h. All persons other than the City who are required to plant trees as a condition of approval for a tree removal on City property shall provide a binding maintenance agreement for the minimum length of three complete growing seasons or three calendar years, whichever is longer.
- i. The City may require any person granted a permit for tree planting on City property to provide a maintenance agreement for the tree. The maintenance agreement shall normally be waived if the tree planting is voluntary. However, even if voluntary, the City may require a maintenance agreement to avoid costs of removal of trees that do not survive.
- j. The maintenance agreement shall detail how the plantings will be maintained to ensure the protection and satisfactory survival of trees according to the guidelines in Table 1 in Section 050. Reinforcement plantings shall occur if survival rates drop below the required guidelines in Table 1 in Section 050.
- (1) The maintenance agreement shall include:
- (a) An assessment of existing conditions and needs for:
- 1) Water.
 - 2) Nutrients.
 - 3) Control of competing vegetation.
 - 4) Protection from disease, pests, predators, and mechanical injury.
 - 5) Reinforcement planting provisions if survival rates drop below those outlined in the tree planting guidelines in Table 1 below.
 - 6) A plan to conduct the needed treatments and monitor results.
 - 7) Evidence of legal right to implement the agreement on the selected site.
 - 8) Certification or agreement by a party responsible for the care and monitoring.
 - 9) Provision for access and inspection by the Public Works Director or designee.

050 Tree Planting Requirements

1. Except as otherwise approved by the Public Works Director or designee, all trees planted on City property, except street trees, shall be of a species native to the northern Willamette Valley and selected from the publication "Trees to Know in Oregon", published by Oregon State University and the Oregon Department of Forestry, or recognized publication identifying native trees and shrubs.

2. Tree planting guidelines:

Table 1

| <i>Size</i> | <i># Required Per Acre (For Afforestation And Reforestation Only)</i> | <i>Approximate Spacing (For Afforestation And Reforestation Only)</i> | <i>Survivability Requirement After Three Years Or Three Growing Seasons (<u>All Plantings</u>)</i> |
|---|---|---|--|
| Bare root seedlings or Whips | 300 | 12' X 12" | 75%/225 |
| Container grown (1,2,3 gallon) | 300 | 12' X 12' | 75%/225 |
| Container grown (5,7 gallon) or 1" caliper Ball & Burlap (B&B) | 200 | 15' X 15' | 85%/170 |
| Container grown (15, 25 gallon) or 2" caliper Ball & Burlap (B&B) | 100 | 20' X 20' | 100%/100 |

NOTES:

- *These stocking and survival requirements are the minimum numbers estimated to meet the definition of forest from bare land.*
- *In certain circumstances any combination of the above mentioned stocking options may be appropriate strategies to fulfill the requirements of tree mitigation. They will be evaluated on a case-by-case basis by the Public Works Director or designee.*
- *Spacing does not imply that trees or shrubs must be planted in a grid pattern.*

060 Tree Care and Maintenance1. General Provisions

- This section applies to trees planted on City property by persons other than the City;
- All trees shall be maintained according to ANSI A300-2001 for proper tree care and maintenance;
- All trees planted shall be cared for and maintained for a period of three calendar years or three complete growing seasons, whichever is longer, after the date of planting.

2. Tree Care and Maintenance

- Mulch shall be maintained on the Critical Root Zone;
 - Care shall be taken to avoid placing mulch against the base of the tree trunk;
 - At least three inches and no more than four inches of mulch shall be placed on the tree's Critical Root Zone.
- When feasible, trees shall be watered from May 1 until September 30;

- (1) Trees shall be watered at least once a week;
 - (2) Water shall be placed only within the Critical Root Zone;
 - (3) The trees shall be watered at a rate of at least ten (10) gallons per week;
 - (4) Trees shall not be watered more than twice a week during the maintenance period.
- c. If tree stakes and tree ties are installed at the time of planting they shall be removed one year after planting;
- d. Trees shall be maintained for visual and passageway clearance;
- (1) Visual Clearance:

Visual clearance must be maintained according to the guidelines set forth in Chapter 18.795 of the Tigard City Code.
 - (2) Passageway Clearance:
 - (a) Sidewalks- trees shall be pruned to provide at least eight feet of clearance above the walkway;
 - (b) Local Streets- trees shall be pruned to provide at least 13 feet of clearance above the roadway;
 - (c) Collector Street- trees shall be pruned to provide at least 15 feet of clearance above the roadway
 - (d) Arterial Street- trees shall be pruned to provide at least 18 feet of clearance above the roadway.
 - (e) Topping trees is an unacceptable form of tree care and maintenance and shall not be practiced on any tree located on City property except in the case of an emergency. Topping is defined as the severe and indiscriminate cutting of tree branches back to lateral branches that are too small to assume the terminal role.

070 Tree Protection

The tree protection provisions in this section apply to the protection of trees on City property.

1. Tree Protection Methods

- a. The protection of an individual tree's critical root zone shall be determined by the method listed below unless otherwise approved by the Public Works Director or designee:

Trunk Diameter Method - one foot of radial distance for every one inch of tree diameter (DBH, 4 ½ feet above the ground on the uphill side) under 30 inches DBH. For trees over 30 inches DBH allow 1-½ feet per 1 inch of DBH.

- b. All tree protection devices shall be located on the Tree Protection Plan. Details and specifications are required as to how the trees will be protected on site;
- c. Tree protection devices shall be installed to protect the root zones of trees located on adjoining properties if any type of construction activity will be disturbing the critical root zone unless otherwise approved by the Public Works Director or designee;
- d. A construction sequence shall be provided and shall include:
 - (1) installation and removal of tree protection devices;
 - (2) clearing, grading, or installation of sediment and erosion control measures;
 - (3) other activities that may be required to implement the tree protection measures;
- e. Include in the notes on the final set of plans: "Equipment, vehicles, machinery, dumping or storage, or other construction activities, burial, burning, or other disposal of construction materials shall not be located inside of any tree protection device.";
- f. All tree protection devices shall be:
 - (1) Visible;
 - (2) Well-anchored;
 - (3) Approved in the field by the Public Works Director or designee prior to clearing, grading, or the beginning of construction;
 - (4) Remain in place and maintained until the project has shown compliance with development requirements from the City's Planning Department.
- g. The location of the stockpile and staging areas for construction shall be identified on the Tree Protection Plan;
- h. All tree protection guidelines shall be included in the final Tree Protection Plan's notes or drawings;
- i. Guidelines for replacement. Replacement of a tree shall take place according to the following guidelines:
 - (1) A replacement tree shall be an approved species taking into consideration site characteristics;
 - (2) If a replacement tree of the size cut is not reasonably available on the local market or would not be viable, the Public Works Director or designee shall require replacement with more than one tree in accordance with the following formula:

The number of replacement trees required shall be determined by dividing the caliper inches of the tree removed or damaged by the caliper size of the replacement tree(s) (no less than 1 inch and no more than 1.75 inches). The caliper inches shall be measured at six inches above the ground, on the uphill side if there is a slope. If the diameter is larger than four (4) inches in diameter at six inches above the ground then the measurement shall be taken at DBH. If this number of trees cannot be viably located on the subject property, the Public Works Director or designee may require one or more replacement trees to be planted on other property within the City, either on City property or, with the consent of the owner, on private property;

- (3) The planting of a replacement tree shall take place according to the guidelines set forth by the International Society of Arboriculture.

080 Hazardous Tree Removal

1. The standard used by the Public Works Director or designee for evaluating a tree's condition will be the International Society of Arboriculture's "Tree Hazard Evaluation Form";
2. Above-ground parts of a felled tree on City property should normally be removed from the site by the City or its contractor. The wood may be left on site if it does not create a hazardous condition. No person other than the City or its contractor shall remove wood from City property without the approval of the Public Works Director or designee.

090 Replacement Trees

This section applies to the replacement of trees and trees planted as mitigation as required by Tigard Municipal Code, Chapter 9.06.

1. Existing non-hazardous trees removed by development projects or other construction activities shall be replaced with types of trees approved by the Public Works Director or designee according to the tree plan requirement below;
2. Tree plan required. A tree plan for the removal, planting, and protection of trees six inches at DBH or greater prepared by an International Society of Arboriculture Certified Arborist shall be provided for any development on City property. Widening of existing public streets will be exempted from tree mitigation requirements. Construction of new streets and extension of existing streets as shown in the Transportation System Plan maps are likewise exempted from the tree mitigation requirements. Protection is preferred over removal.
 - a. Plan requirements. The tree plan shall include the following:
 - (1) Identification of the location, size and species of all existing trees six inches DBH and larger;
 - (2) Identification of a program to save existing trees six inches DBH or greater and/or mitigate tree removal over 12 inches DBH. Mitigation must follow the replacement guidelines set forth in the Guidelines for Replacement in the Tree Manual, in accordance with the following standards and shall be exclusive of

trees required by other development code provisions for landscaping, street trees and parking lots:

- (a) Retention of less than 25% of existing trees over 12 inches DBH requires a mitigation program in accordance with the Guidelines for Replacement in the Tree Manual;
 - (b) Retention of 25% to 50% of existing trees over 12 inches DBH requires that two-thirds of the DBH of those trees to be removed be mitigated in accordance with the Guidelines for Replacement in the Tree Manual;
 - (c) Retention of 50% to 75% of existing trees over 12 inches DBH requires that 50 percent of the DBH of those trees to be removed be mitigated in accordance with the Guidelines for Replacement in the Tree Manual;
 - (d) Retention of 75% or greater of existing trees over 12 inches DBH requires no mitigation.
 - (3) Identification of all trees that are proposed to be protected;
 - (4) A protection program defining standards and methods that will be used by the applicant to protect trees during and after construction shall be provided.
3. All trees to be protected and retained must be evaluated by an International Society of Arboriculture Certified Arborist and deemed of acceptable risk, free of significant insect and disease problems and be in an overall healthy condition;
4. Guidelines for replacement. When replacement of a tree is required as a condition of a tree removal approval, replacement shall take place according to the following guidelines:
- a. A replacement tree shall be an approved species taking into consideration site characteristics;
 - b. If the number of replacement trees cannot be viably located on the development site, the Public Works Director or designee may require some or all of the replacement trees be planted on another site within Tigard on City property or, with the consent of the owner, on private property;
 - c. The planting of a replacement tree shall take place according to the guidelines set forth by the International Society of Arboriculture.
5. In lieu-of payment. In lieu of tree replacement under Section 090.2 above, a party may, with the consent of the Public Works Director or designee, elect to compensate the City for its costs in performing such tree replacement for the caliper inches at DBH that were removed. The replacement cost to plant a one inch caliper tree shall be based the total of the costs listed below.
- a. Average wholesale cost of one, 1-inch caliper tree.
 - b. Average hourly cost for two City employees to plant one, 1-inch caliper tree.

- c. Average cost of materials required for two City employees to plant one, 1-inch caliper tree.
- d. Average hourly cost of equipment and equipment operation by City employee to plant one, 1-inch caliper tree.
- e. Average cost for two City employees to handle and transport one, 1-inch caliper tree.